

January 1998

## OXY USA Improves Operational Efficiency of its Oil Well Pumping Units

Does a 6.5-month payback for a project that improves the operational efficiency of oil pumping units sound too good to be true? Well, it's not. This payback is just what OXY USA achieved with their Motor Challenge Showcase Demonstration project. By making mechanical and electrical modifications to five of its oil wells, OXY reduced energy consumption by more than 12 percent, or 54,312 kWh, saving \$2,227 annually. Combined with \$3,135 in reduced demand charges, the project resulted in total annual savings of \$5,362. The simple payback of just 6.5 months for the total project proves the modifications made good economic sense.

OXY USA, a subsidiary of Occidental Petroleum Corporation, operates oil and gas exploration and production facilities throughout the Southern and Southwestern United States and the Gulf of Mexico. Like other oil drilling companies operating in Kansas, OXY sought ways to reduce pump-



*Showcase Demonstration team in front of pumping unit, left to right: Joseph King, Coriolis (formerly with DynCorp); Tom Barrick, OXY USA; Robert Egbert, Wichita State University; Harry McArthur, FLOWCARE Engineering; Philip Jallouk, Oak Ridge National Laboratory*

ing costs of its electrically powered beam-type oil wells. High energy costs were forcing some of Kansas' independent oil producers to close marginally operating wells, and the state was feeling the economic impact.

For this Motor Challenge Showcase Demonstration project, OXY implemented changes to units at the Bemis Oil Field in Ellis County. In addition to OXY, the  
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A Motor Challenge  
Publication  
[www.motor.doe.gov](http://www.motor.doe.gov)

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## Motor Challenge 1998 Teleconference Set for May 19, 9am-11am PDT

On October 28 and 29, 1997, the Motor Challenge Teleconference Steering Committee convened in Dallas, Texas. Comprised of industrial representatives, the committee participants advised Motor Challenge on the content, format, and promotion of the live May 1998 Teleconference, entitled *Efficient Motor Systems: Your Path to Profits*. The Steering Committee also helped Motor Challenge select May 19, 1998, from 9:00 am to 11:00 am Pacific daylight time, to broadcast the event.

The committee discussed theme, pro-

duction, marketing and promotion, and case study examples. The theme of the teleconference is motor systems improvement, emphasizing case studies to highlight different aspects. It will have a business approach and will feature a panel of experts who will answer questions on the air as well as present on pertinent topics.

After attending the teleconference, Motor Challenge hopes the attendees will come away motivated and with the "know how" to improve the motor systems in their  
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## TURNING POINT

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## Compressed Air Challenge Taking Form

Since we last reported in the August issue, substantial progress has been made in forming a national initiative to promote efficient and effective industrial compressed air systems. The project now has a name—the Compressed Air Challenge—and a working budget for the first year of operations. Ten sponsors have made a commitment of \$30,000 each to support the first year of the project. These sponsors include:

- Compressed Air and Gas Institute
- Consortium for Energy Efficiency
- Energy Center of Wisconsin
- Honeywell
- Industrial Compressor Distributors Association
- Iowa Energy Center
- NEES Companies
- New York State Energy Research and Development Authority
- Northwest Energy Efficiency Alliance
- U.S. Department of Energy

The Industrial Compressor Distributors Association is leading an effort to involve other associations of air compressor equipment distributors. In addition, the Association of Ingersoll-Rand Distributors and the Association of Independent Compressor Distributors have announced their intention to participate.

In the first year, the Compressed Air Challenge plans to:

- develop materials for a customer awareness campaign, targeted for plant managers and plant operating personnel;
- develop and test market a training curriculum on compressed air system best practices for plant operating personnel; and
- develop a framework for a certification program for plant operating personnel.

The first meeting of the Advisory Board was held in Madison, Wisconsin, on September 10, 1997, with representatives from the sponsoring organizations in attendance. The Board selected the Energy Center of Wisconsin (ECW) as the project manager and established a Project Development Committee to provide leadership and direction for project implementation. The Committee includes representatives of major stakeholder groups that have an

interest in the Compressed Air Challenge. Committee members include: Aimee McKane, Lawrence Berkeley National Laboratory, representing DOE/Motor Challenge; Bill Haman, Iowa Energy Center, representing public interest groups; Kevin Keena, NEES Companies, representing utilities; David McCulloch, consultant to the Compressed Air and Gas Institute, representing compressed air equipment manufacturers; William Scales, Compressed Air Efficiency Council, representing compressed air system consultants; and Bruce Medaris, Association for Facilities Engineering, representing plant operating personnel. In a subsequent Board action, Joseph Ghislain of Ford Motor Company was selected to represent end-use companies on the Committee.

Aimee McKane has given presentations on the Compressed Air Challenge to several groups interested in participating, including associations of compressed air equipment distributors and AirNet, a group of utilities, consultants, industrial associations, equipment manufacturers, energy service companies, and end users.

A kick-off event is planned for mid-January in Washington, D.C. to formally announce the Compressed Air Challenge and to recognize sponsors and other Challenge participants. If you are interested in becoming a Compressed Air Challenge sponsor, please call Aimee McKane at (202) 484-0892.

## PARTICIPATE IN MATERIAL DEVELOPMENT

*David Lutzke, the project manager from ECW, is continuing to recruit plant personnel who are interested in participating in the development of training curriculum and customer awareness materials for the Compressed Air Challenge. Travel is not required; we are seeking individuals who have responsibility for industrial compressed air systems willing to review draft materials to ensure that the Challenge produces information that is useful to plant operating personnel. For more information, call David Lutzke at (608) 238-8276 x48.*



## Guest Column

Motor Nameplates: Fact, Fiction, or Fantasy

by Ziba Kellum, Advanced Energy Corporation, Raleigh, NC.

*Advanced Energy is the nation's only independent motor test lab accepted for UL's Energy Verification Services Laboratory Program and is the first accredited lab for the motor efficiency testing required by EPCAct.*

Can you believe the efficiency stamped on a motor nameplate? According to Ziba Kellum, Senior Motor Systems Engineer, "Our testing experience shows that actual tested efficiencies do not always agree with the number on the nameplates."

What efficiency number is marked on the motor nameplate?

All Design A and B, single-speed, poly-phase, squirrel-cage medium motors in the range of one through 200 horsepower, for certain frame sizes, and which are manufactured to National Electrical Manufacturers Association (NEMA) standards are required to have their nominal full-load efficiency given on the nameplate. Efficiency is defined as the power output of the motor (shaft horsepower) divided by the power input to the motor (kilowatts). Because efficiency will change as the load on a motor changes, the efficiency marked on the motor nameplate represents the efficiency of the motor when the motor is running at full load, e.g., a 10 horsepower motor loaded to exactly 10 horsepower.

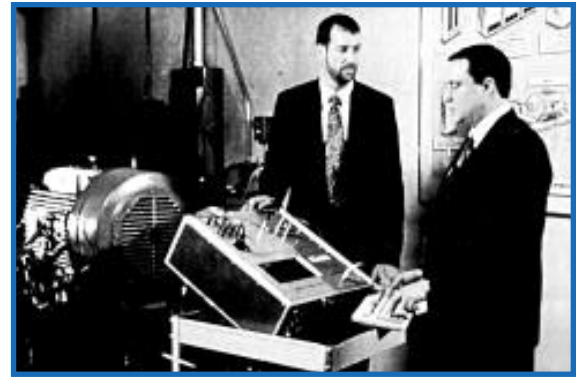
How is nameplate efficiency determined? As defined in MG1-1993, the motor nameplate efficiency represents the average efficiency of a large population of motors of duplicate design. Theoretically, if a manufacturer had a production run of 10,000 motors of duplicate design, then the average efficiency of all the measured efficiencies would be the number marked on the nameplates of those 10,000 motors. That number is called the NEMA *nominal* efficiency. This system does not guarantee that any one motor will have an efficiency equal to the nominal efficiency value. Rather, the nominal efficiency allows for normal variations in materials, manufacturing practices, and testing accuracy devia-

tions. According to NEMA, combined variations in measured losses from both manufacturing and testing can be as high as plus or minus 20 percent of the nominal loss value.

Associated with the nominal full-load efficiency on a motor nameplate (according to the NEMA system of specifying efficiency) is a second efficiency number that is the minimum efficiency. The minimum efficiency represents the level reached when both raw materials and manufacturing processes are at the least favorable end of their specified tolerances. Minimum efficiency is important, since it is expected that no motor in a population of motors should have an efficiency lower than the minimum associated with a given nominal efficiency.

Both nominal and minimum efficiency values are of use to the prospective purchaser of a motor. The *nominal* efficiency can be used in estimating the power required to supply a number of motors. The *minimum* efficiency permits the motor user the assurance of having received the specified level of performance. Both the nominal and minimum efficiencies allow a common basis for comparison of the alternative motors available, and in conjunction with other motor application information, may be utilized to compute relative energy and energy cost savings.

What has Advanced Energy found? Advanced Energy has tested over 400 distinct motors according to IEEE 112 Method B. We have found that actual tested efficiencies may or may not closely agree with



*Ziba Kellum (left), of Advanced Energy, demonstrates motor testing for energy efficiency performance.*

the numbers on the nameplates. The deviation from nameplate efficiency is very small or non-existent for some manufacturers, and very large for others. In general, the motors we have tested show efficiencies lower than the NEMA nominal efficiency on the nameplate, but higher than the minimum efficiency. A significant number of motors, however, do fail to meet even the minimum efficiency.

Such findings could present a serious problem, since each electric motor covered under the Energy Policy Act of 1992 (EPCAct), manufactured in the U.S., or imported into the U.S., after October 24, 1997, is required to have a nominal full-load efficiency that is not less than a certain value. Approximately 75 percent of the motors produced might be affected.

A recent policy statement, released by the U.S. Department of Energy (DOE), provides guidelines for determining whether a motor is covered under EPCAct. It classifies motors into five categories:

- Category I—For "electric motors" covered under EPCAct, whether manufactured alone or as a component of another piece of equipment, DOE will enforce EPCAct efficiency standards beginning October 25, 1997.
- Category II—For certain "definite purpose" motors that can also be used in most general purpose applications, DOE will generally enforce EPCAct standards no later than October 25, 1999.
- Categories III-V—Describes motors not within EPCAct's definition of "electric motor," and therefore, not covered under EPCAct.

For more information please contact Kitt Butler at (919) 857-9017.

*MG1-1993—a collection of standards for performance and nameplate labeling of AC and DC motors and generators.*

*IEEE 112 Method B—the Institute of Electrical and Electronics Engineers (IEEE) standard test procedure for polyphase induction motors and generators.*

*Nominal loss value—the loss value based on the nominal efficiency. For example a nominal efficiency of 95% means a nominal loss value of 5%.*

## International Interest in Motor Challenge

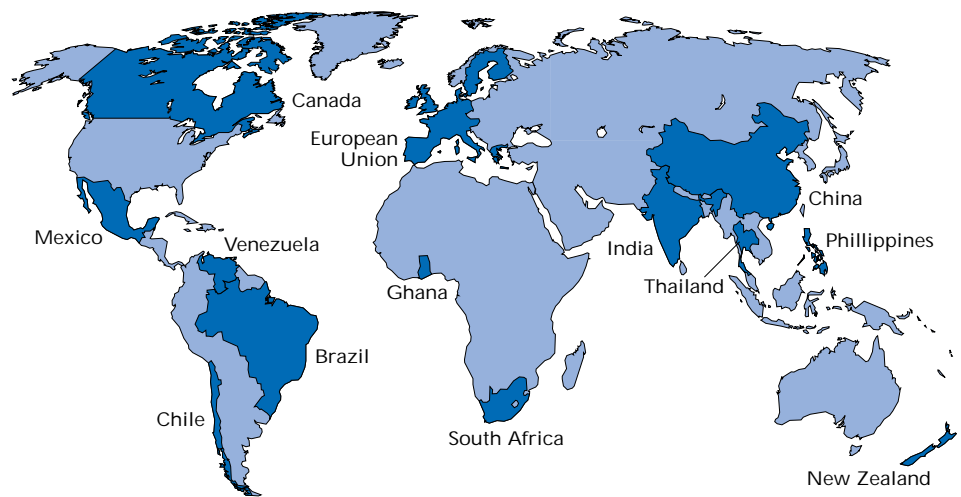
Motor Challenge has begun responding to requests from other countries for information and assistance in establishing a program similar to Motor Challenge. While this activity is a small part of the overall program, it affords an opportunity to share information, assist other countries in achieving greater energy efficiency, and build on existing Motor Challenge U.S. industry partnerships to foster new business opportunities abroad. Motor Challenge now has 65 international affiliate organizations. Program information has been shared with representatives from Canada, the European Union, Mexico, Chile, Venezuela, Brazil, South Africa, Ghana, China, India, Thailand, the Philippines, and New Zealand.

Lawrence Berkeley National Laboratory (LBNL) is managing the international effort on behalf of Motor Challenge, with a primary focus on developing in-depth implementation strategies with the governments of China and India as part of bilateral agreements with those two countries.

### India

In January, Andy Szady of Oak Ridge National Laboratory (ORNL) presented a paper entitled "U. S. Department of Energy's Motor Challenge Demonstration Projects" at the Seminar on Energy Efficiency in New Delhi. The presentation was made at the invitation of U.S. AID in New Delhi and hosted by Resource Management Associates and the Associated Chambers of Commerce and Industry of India. The presentation included: an overview of DOE's Motor Challenge Program, a detailed overview of what constitutes a successful Showcase Demonstration; and a demonstration of *MotorMaster+* software. The presentation generated considerable interest and questions from the audience, and requests for the application forms to become an affiliate member of the Motor Challenge Program.

In response to a request from the Energy Management Centre of India, LBNL solicited comments from U.S. experts concerning the results of a demonstration project on energy-efficient fans. Comments were provided by Paul Novotny of New



York Blower and Andy Szady of ORNL.

LBNL and Motor Challenge hosted a meeting on September 4th, 1997, of organizations interested in becoming members of the U.S. Team for Motor Challenge in India. The purpose of the meeting was to share information on existing activities in India and to determine the most effective way for Motor Challenge to coordinate with these activities. In addition to LBNL and Motor Challenge, meeting participants included representatives from U.S. AID, the World Bank, ORNL, International Institute for Energy Conservation (IIEC), Hagler-Bailly Services, Inc., the International Resources Group, and U.S. DOE's Office of Industrial Technologies. As a result of this meeting, a new strategic plan is being developed for the U.S. Team. A visit to India by LBNL staff to discuss the draft strategic plan with Indian organizations and to solicit interest in developing motor systems management program activities is planned for 1998.

### China

LBNL hosted a meeting with a delegation of four Chinese government officials from the State Economic and Trade Commission on May 21. An overview of the Motor Challenge Program was provided, along with a discussion of elements of the agreement with China's State Planning Commission to work cooperatively on a program to promote energy-efficient motor-driven systems. A video conference link to members of LBNL's China Energy Group provided the guests with an opportunity to communicate in their own language.

In June, Aimee McKane worked with team co-leader Steve Nadel of ACEEE to recruit organizations and private companies for the U.S. China Electric Motor Systems Energy Efficiency Team. Companies and organizations expressing interest include: IIEC, Sustainable Energy Partnerships, Ingersoll-Rand Co, Pneumatech/Conservair, Quincy Compressor, Strategic Guide, Hagler Bailly, U.S. Electrical Motors, ORNL, ITT Flygt Corp., Rockwell Automation, and the International Copper Association. A draft implementation plan was prepared and submitted to China's State Planning Commission in late June and is under review.

### Hemispheric Initiative

Vestal Tutterow of LBNL represented Motor Challenge at the Hemispheric Energy Initiative Workshop in Toronto, Canada, in June 1997. He provided a program overview, which received a very positive response from representatives from several South American countries.

For more information on international activities for Motor Challenge, call Vestal Tutterow at (202) 484-0884, e-mail: [vctutterow@lbl.gov](mailto:vctutterow@lbl.gov) or Aimee McKane at (202) 484-0892, e-mail: [atmckane@lbl.gov](mailto:atmckane@lbl.gov).

### INTERNATIONAL MOTOR CONFERENCE PROCEEDINGS AVAILABLE

*"Energy Efficiency Improvements in Electric Motors and Drives" (ISDN # 3-540-63068-6) is available for \$84.95 from Springer-Verlag New York, Inc., by calling (212) 460-1500.*



## Motor Challenge Partner Spotlight



DuPont Joins as  
Second Motor  
Challenge  
Excellence Partner  
Excellence pays off!  
Motor Challenge is  
happy to welcome  
DuPont as a charter

Excellence Partner. DuPont's strong commitment to energy management made the Motor Challenge Excellence Partnership a natural fit. DuPont committed its Chambers Works plant in Deepwater, New Jersey, to be the pilot Excellence Partner site. It is the host manufacturing site for three of DuPont's 21 chemicals and specialties strategic business units and two joint ventures, producing more than 450 different products.

DuPont will work with Motor Challenge initially to survey its pumping systems at Chambers Works to identify further

opportunities for improving pumping system efficiencies.

During the 1990s, Chambers Works has had an aggressive program to improve energy utilization, reduce cost of consumed energy, and conserve energy. The program includes increasing energy awareness by enlisting ideas from employees for conserving energy and improving energy utilization. In addition, DuPont has implemented a preventative and predictive maintenance program, which includes identifying and repairing leaks in the utility systems, and inspecting and repairing steam traps to insure proper operation.

Since 1993, DuPont's efforts to conserve energy and improve efficiency at Chambers Works have resulted in a reduction in energy related emissions. For example, the company has reduced sulfur oxide by 150 tons, nitrogen oxide by 250 tons, and carbon dioxide by 125,000 tons. Additionally, since 1993, DuPont increased productivity by 5%, reduced energy cost per pound of product produced by 25%, and improved overall energy utilization by 29%. Accumulated energy cost savings from 1994 to 1997 amount to more than \$45 million.

DuPont joins 3M, the first Motor Chal-

lenge Excellence Partner, as an industry leader in energy management. Motor Challenge Excellence Partners send a strong signal to other companies that efficient energy utilization makes good business sense, resulting in improved competitiveness and cost savings.

*Motor Challenge Excellence Partners are end-user companies that have made an independent decision to undertake efforts aimed at continuous improvement of their motor systems management practices. Motor Challenge and Excellence Partners work together to identify new energy management methods and opportunities in their organizations. The primary objective of the Excellence Partnership is to obtain evidence that industry is capable of achieving energy efficiency, thereby reducing greenhouse gas emissions, on a voluntary basis by helping companies develop, improve, benchmark, and report motor-driven system management practices at manufacturing facilities or business units. For more information, call Chuck Procner at (913) 831-2010 or access the Motor Challenge homepage at [www.motor.doe.gov](http://www.motor.doe.gov).*

### ALLIED PARTNERS USING MOTOR CHALLENGE FACT SHEET TO GET THE WORD OUT ON EPACK

*Applied Industrial Technologies of Kentucky is distributing the Motor Challenge fact sheet, Frequently Asked Questions on EPACK, to 38 product specialist who cover up to 500 branches across the country. This fact sheet will equip the product specialists with a greater knowledge of EPACK, so they will be better able to help the end-user customer understand the impact and benefits to be gained from EPACK. The EPACK fact sheets will also be distributed at an upcoming workshop.*

*Motion Industries, Inc., a national distributor of electrical power transmission components headquartered in Alabama, is distributing the Motor Challenge fact sheet entitled Frequently Asked Questions on the Impacts of the Energy Policy Act of 1992 on Industrial End Users of Electric Motor-Driven Systems to 2,800 sales personnel. "Our objective is two-fold: to educate Motion personnel on EPACK and the higher efficiency motor and to deliver this same information to our customer - the end user," explains Vic Binns, Product Manager-Electrical at Motion Industries, Inc.*

## TAPPI Holds Annual Engineering Conference

On October 6-8, 1997, several members of the Motor Challenge team attended the annual conference of the Engineering Division to the Technical Association of the Pulp and Paper Industry (TAPPI) in Nashville, Tennessee. The conference included a "Motor Challenge Roundtable," which featured presentations on *MotorMaster+* software, *ASDMaster* software, and TAPPI's involvement in Motor Challenge. Motor Challenge and DOE's Office of Industrial Technologies each exhibited at the accompanying trade show.

In August 1997, TAPPI became an Allied Partner and formally committed to activities that will give TAPPI's 33,000 members access to a variety of tools, products, and training opportunities related to efficient motor systems management. These activities will be managed by the

TAPPI Energy Management Committee of the Engineering Division, with assistance from TAPPI staff members. One of TAPPI's first activities is to offer *MotorMaster+* and user's manuals to each pulp and paper mill in the country. Motor Challenge is working with TAPPI to offer training on various motor systems topics at local TAPPI section meetings and future conferences. TAPPI and Motor Challenge then plan to tailor selected Motor Challenge materials to the pulp and paper industry. This activity may involve developing new materials specifically for the industry.

For additional information, contact Vestal Tutterow, Lawrence Berkeley National Laboratory, Motor Challenge Program, at (202) 484-0884 x108 or e-mail: [vctutterow@lbl.gov](mailto:vctutterow@lbl.gov).



## EPACT FACTS

*Energy Policy Act (EPAct) Takes Effect*  
On October 24, 1997, the motor efficiency requirements of EPAct of 1992 went into effect, requiring most 1- to 200-horsepower, general purpose, polyphase, squirrel-cage induction motors manufactured in the United States after October 24, 1997, to meet minimum efficiency standards. Motor Challenge recognizes that many of those affected by the act have questions and therefore will be addressing many EPAct topics in future issues of Turning Point.

Access the policy statement on coverage and enforcement of energy-efficient requirements for electric motors at [www.eren.doe.gov/buildings/codes\\_standards/rules/menfpol/index.htm](http://www.eren.doe.gov/buildings/codes_standards/rules/menfpol/index.htm)

*Do imported motors have to meet EPAct standards?* Yes.

*Do imported motors need to be tested in this country?* No. Testing of motors impacted by EPAct can be carried out in a laboratory that has been accredited by: (1) the National Voluntary Laboratory Accreditation Program (NVLAP), (2) a foreign organization recognized by NVLAP, or (3) an organization classified by the Department of Energy as a nationally recognized accreditation body.

Motors imported into this country could be tested at a laboratory in another country if the laboratory is accredited by a foreign organization that is recognized by NVLAP. Any test results produced by the laboratory would establish compliance with the Act and DOE's regulations only if the underlying testing was performed in accordance with the test procedures prescribed by EPAct.

*Do any foreign certifications qualify?*  
No foreign certification programs have been nationally recognized at this time (none have petitioned for national recognition). For a certification program to be classified by DOE as nationally recognized in the United States, the organization operating the program must submit a petition to the Department showing the program's eligibility for the "nationally recognized" classification.

## The Motor Challenge Clearinghouse Technical Library

What can the Technical Library do for you?  
As part of the Motor Challenge Information Clearinghouse, the Motor Challenge Tech-

nical Library provides Motor Challenge Partners with objective and up-to-date information and research support on energy efficiency and technologies for motor systems, their components, and related topics. The

Technical Library can also locate and provide access to a variety of energy information resources around the United States.

Who can use the Technical Library?

The Technical Library will provide energy information services and materials to all Motor Challenge Partners.

What services are offered?

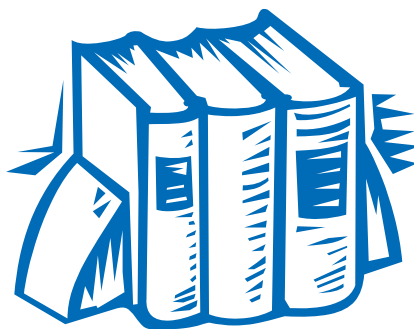
The library maintains a collection of books, reports, and periodicals related to motors and energy efficiency. Our research librarians search electronic databases to find quick and timely answers to your questions. We also have access to the Internet and a broad knowledge of referrals to help you make appropriate selections.

Does the Technical Library lend materials?  
Not directly. However, Motor Challenge Partners may borrow our circulating materials by using their local public library's interlibrary loan program. In addition, the Technical Library staff will provide single photocopies of articles from subscription journals and will also facilitate retrieval of other materials needed by Motor Challenge Partners by offering referrals to publishers and libraries. We'll do our best to match you up with the materials you need.

How does the Technical Library add value to my work?

As a Motor Challenge Partner, you can expect the Technical Library to provide you with cutting-edge, objective information about energy efficiency in motor and drive systems, including case studies, manufacturers' listings, and statistics. We know that access to current information is a key to success in optimizing savings and competitiveness in business, while promoting

the energy-efficient use of motor systems. It's our job to keep you informed, and we're proud to help.



How is information available to me?

If you are a Partner and your request is for Motor Challenge fact sheets, the Motor Challenge Information Clearinghouse can provide those directly upon request. For

more information about Technical Library Services, please contact the Motor Challenge Information Clearinghouse at (800) 862-2086.

*The Technical Library publishes monthly updates of "Articles of Interest" on the Motor Challenge Information Clearinghouse Web site—[www.motor.doe.gov](http://www.motor.doe.gov). Other updates are made weekly to the Motor Challenge Web site.*

## Motor Challenge 1998 Teleconference

*continued from page 1*

plants. The teleconference will be structured to identify the tools and resources needed for the attendees to improve their companies' bottom line through more efficient motor systems.

Motor Challenge will provide increased support to the downlink sites to ensure that the teleconference is as productive as possible to all the participants. One way to accomplish this is through wraparound events at the individual sites. These events are held immediately prior to or following the teleconference and are tailored to the specific needs of the organization and the audience at the site.

The teleconference is scheduled to be broadcast live on May 19 from 9:00 am to 11:00 am Pacific daylight time. Once identified, downlink sites will be advertised on the Motor Challenge Web site. Organizations interested in hosting downlink sites, please call (800) 862-2086 or access the Web site at [www.motor.doe.gov/teleconference98.htm](http://www.motor.doe.gov/teleconference98.htm).

## OXY USA Improves Efficiency

*continued from page 1*

Showcase Demonstration team included DynCorp Corporation, Midwest Energy, Inc. (the local utility), and The Center for Energy Studies at Wichita State University (WSU). These organizations provided analytical and technical expertise. Additional funding was provided by the Kansas Corporation Commission, Kansas Electric Utilities Research Program and U.S. DOE.

Taking a systems approach, the Showcase Demonstration team analyzed the five wells. They recommended mechanical and electrical modifications, and OXY made changes to all five units. Electrical system improvements included checking the service conductor sizing and losses and adding capacitors to correct power factor. One unit's oversized 30-hp 480 volt 3-phase NEMA D motor was replaced with a similar 10-hp model.

Some units also received a mechanical "tuneup". All components were inspected and worn parts were replaced. In addition, lubricating gearboxes and bearings and tightening belts helped improve performance. Dynamic balancing and adjusting the seal of the packing head and stroke length also made a difference.

Follow-up analysis showed the impact of the modifications. The five wells showed decreases in energy demand ranging from 24 to 40 percent. In addition, the wells that underwent modifications beyond the installation of secondary capacitors realized a drop in energy consumption ranging from 13 to 21 percent. For these mature wells, where about one percent of the fluid pumped is oil and the rest brackish water, this represented a savings of 8 kWh (about \$0.32) per barrel of oil pumped. The total savings in both energy and demand charges amounted to about \$0.77 per barrel of oil pumped.

In addition to electrical and cost savings, this project yielded other benefits. Well analyses helped OXY detect problems and prevent potential equipment failure. The varying energy measurements collected on specific wells will help OXY examine potential causes of low-efficiency. OXY USA can apply the experience and lessons learned from this project to analyze and modify other pumps at Bemis Oil Field and elsewhere.

## THE MOTOR CHALLENGE REGIONAL REPRESENTATIVES

*The Motor Challenge Program has six regional representatives throughout the United States who support the program and its Partners. These representatives often coordinate regional and local Motor Challenge workshops and spearhead local outreach efforts. Also, these representatives are highly aware of other federal and state energy initiatives within their area that can help private sector companies leverage their energy dollars.*

*In the last issues, we highlighted Sharon Gill of DOE's Chicago Support Office, Tim Eastling of the Atlanta Support Office, Barbara Alderson of the Denver Support Office, and Roxanne Danz of the Boston Support Office. Below are profiles for the remaining two regional representatives.*



*Maryanne Daniel is the Motor Challenge regional representative in DOE's Philadelphia Regional Support Office. This office services the States of Delaware, Maryland, New Jersey, Pennsylvania, Virginia, and West Virginia and the District of Columbia. Maryanne has been involved with the Motor Challenge Program since 1993 and has supported many Motor Challenge events and workshops within her region, including a regional Energy-Efficient Motor Systems Exchange and the May 1995 National Motor Challenge Teleconference. She has made numerous presentations on behalf of Motor Challenge at energy workshops and meetings. In addition, Maryanne manages the other Technology Access Partnership programs within DOE's Office of Industrial Technologies (OIT) for her region. Prior to serving as the Philadelphia Support Office Industrial Program Manager, she worked for 4 years on the State Energy Conservation Program, Weatherization Assistance Program, and Institutional Conservation Program. Maryanne can be reached by phone at (215) 656-6964; by e-mail at [Maryanne.Daniel@hq.doe.gov](mailto:Maryanne.Daniel@hq.doe.gov); or by mail at U.S. Department of Energy, Philadelphia Regional Support Office, 1880 J.F.K. Boulevard, Suite 501, Philadelphia, PA 19103-7483.*



*Julia Oliver is the Motor Challenge regional representative at DOE's Seattle Regional Support Office, servicing Alaska, Arizona, California, Hawaii, Idaho, Nevada, Oregon, and Washington, as well as the territories of American Samoa, Commonwealth of the Northern Mariana Islands, Republic of Palau, and Guam. Julia has been active in the Motor Challenge since 1992. She also initiated the California Motor Initiative with the California Energy Commission and Allied Partners U.S. Electrical Motors and ITT Flygt Corporation. This state initiative served as a model for a national initiative to optimize the pumping systems of the water and wastewater industry. In addition to her regional work, Julia is responsible for the national marketing and communications efforts of the Motor Challenge, playing a key role in the development of articles and advertisements, fact sheets, the Turning Point newsletter, program style guides, and many other communication products. She was responsible for managing the 1995 Motor Challenge National Teleconference, which was viewed nationally in 48 states; internationally in Mexico, Canada, and the Bahamas; and in the territories of Puerto Rico and the Virgin Islands. She will also be managing the upcoming 1998 International Motor Challenge Teleconference. Most recently, Julia became the team leader for communications for OIT's Technology Access Partnership programs. Julia can be reached by phone at (510) 637-1952; by e-mail at [julia.oliver@oak.doe.gov](mailto:julia.oliver@oak.doe.gov); or by mail at 1301 Clay Street, Rm. 450N, Oakland, CA 94612-5219.*

With regard to the oil well population at large, it is worth noting that the wells studied were in generally good condition. Since OXY USA has a program to perform routine maintenance, it is estimated that the oil wells studied here were more efficient than the average well. A significant

part of this difference is attributable to infrequent maintenance and oversized motors. Thus, implementation of a program of this nature to the general oil well population can be expected to yield much greater savings than those reported here.

## Coming Events 1998

February 5 and 6	ASD Training Workshops Salem, OR, and Seattle, WA, respectively; call Sharon Sniffen (301) 572-0299
March 4	ASD Training Workshop cosponsored by Houston Armature and Reliance Electric, Houston, TX; call Sharon Sniffen at (301) 572-0299
March 4-5	Globalcon 98, Dallas, TX; call Debbie Fernandez at (770) 279-4388
March 16-19	National Plant Engineering and Management Show and Conference, Chicago, IL; call (203) 840-5568
April 1	ASD Training Workshop cosponsored by ITT Flygt, Connecticut Office of Policy and Management, and Northeast Utilities; call Sharon Sniffen at (301) 572-0299
April 7	Motor Challenge Performance Optimization Workshop for water and wastewater plants, White Plains, NY; call Sharon Sniffen (301) 572-0299
April 8-9	West Coast Energy Management Congress, Anaheim, CA; call (770) 447-5083, ext. 224
April 21-23	Industrial Energy Technology Conference, Houston, TX; call Dawna Rosenkranz (409) 847-8950
May 19	Motor Challenge Teleconference, Broadcast Live 9am to 11am Pacific, call (800) 862-2086 or access the Web site at <a href="http://www.motor.doe.gov/teleconference98.htm">www.motor.doe.gov/teleconference98.htm</a>
June 16-18	Air & Waste Management, San Diego, CA; call (412) 232-3444
TBA	ASD Training Workshops in Atlanta, GA; Chicago, IL; and Cleveland, OH.



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### INFORMATION CLEARINGHOUSE

*Do you have questions about using energy-efficient electric motor systems? Call the Motor Challenge Information Clearinghouse for answers, Monday through Friday 9:00 a.m. to 8:00 p.m. (EST).*

**HOTLINE: (800) 862-2086**

*Fax: (360) 586-8303, or access our homepage at [www.motor.doe.gov](http://www.motor.doe.gov)*

## ACEEE REPORT, ANALYSIS OF UTILITY MOTOR-SYSTEMS PROGRAMS, AVAILABLE

Under a contract through Lawrence Berkeley National Laboratory for Motor Challenge, the American Council for an Energy Efficient Economy (ACEEE) recently completed a report on existing electric utility motor-systems programs and emerging trends within the utility industry for motor-systems programs. ACEEE surveyed utility companies representing almost one quarter of the industrial electricity sales in the country.

This report finds that most utilities are planning to continue or expand their existing motor-systems programs, and some are planning to offer new programs. Both new and existing programs will likely focus less on financial incentives and more on providing added services to key customers.

The report discusses two types of motor-systems programs that may emerge: (1) *Public-benefit activities*, possibly on a regional basis, seek to alter market behavior and (2) *For-profit business opportunities* may take the form of a targeted motor service, such as motor management or compressed air "out-sourcing".

You may receive a copy of this report by contacting the Motor Challenge Clearinghouse at (800) 862-2086.

The Motor Challenge  
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